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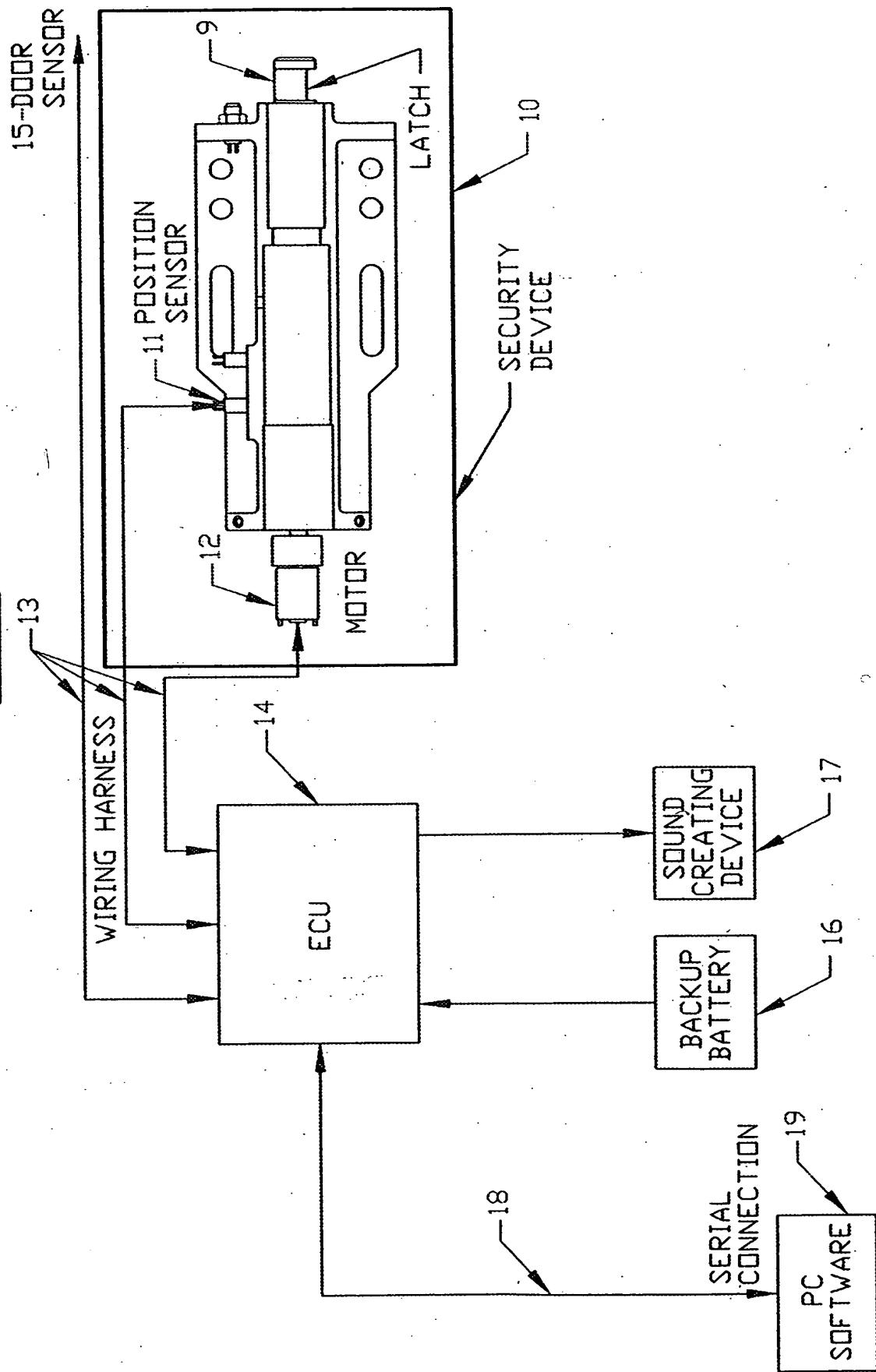
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**FIG 1**



## Electronic Control Unit

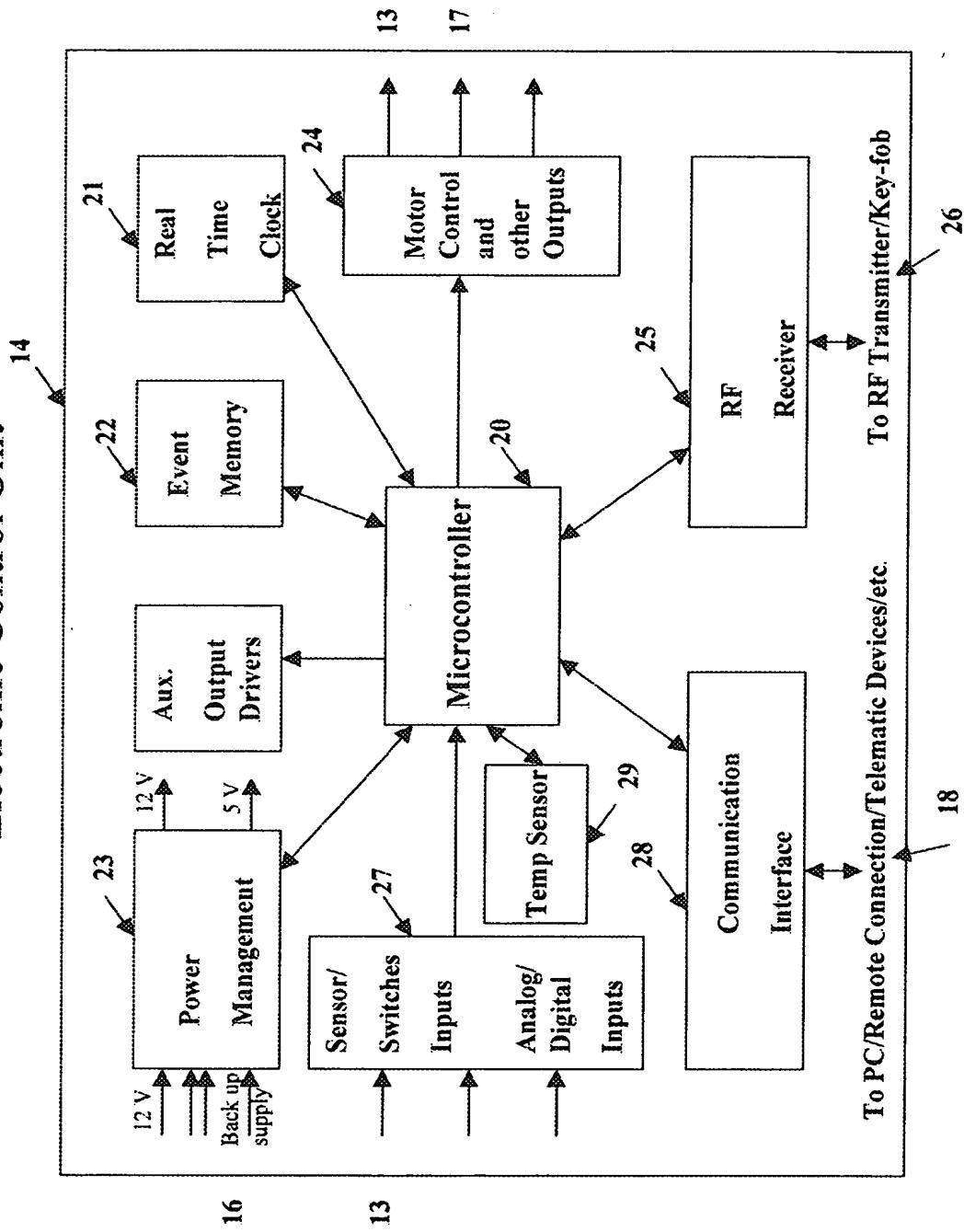


FIG. 2

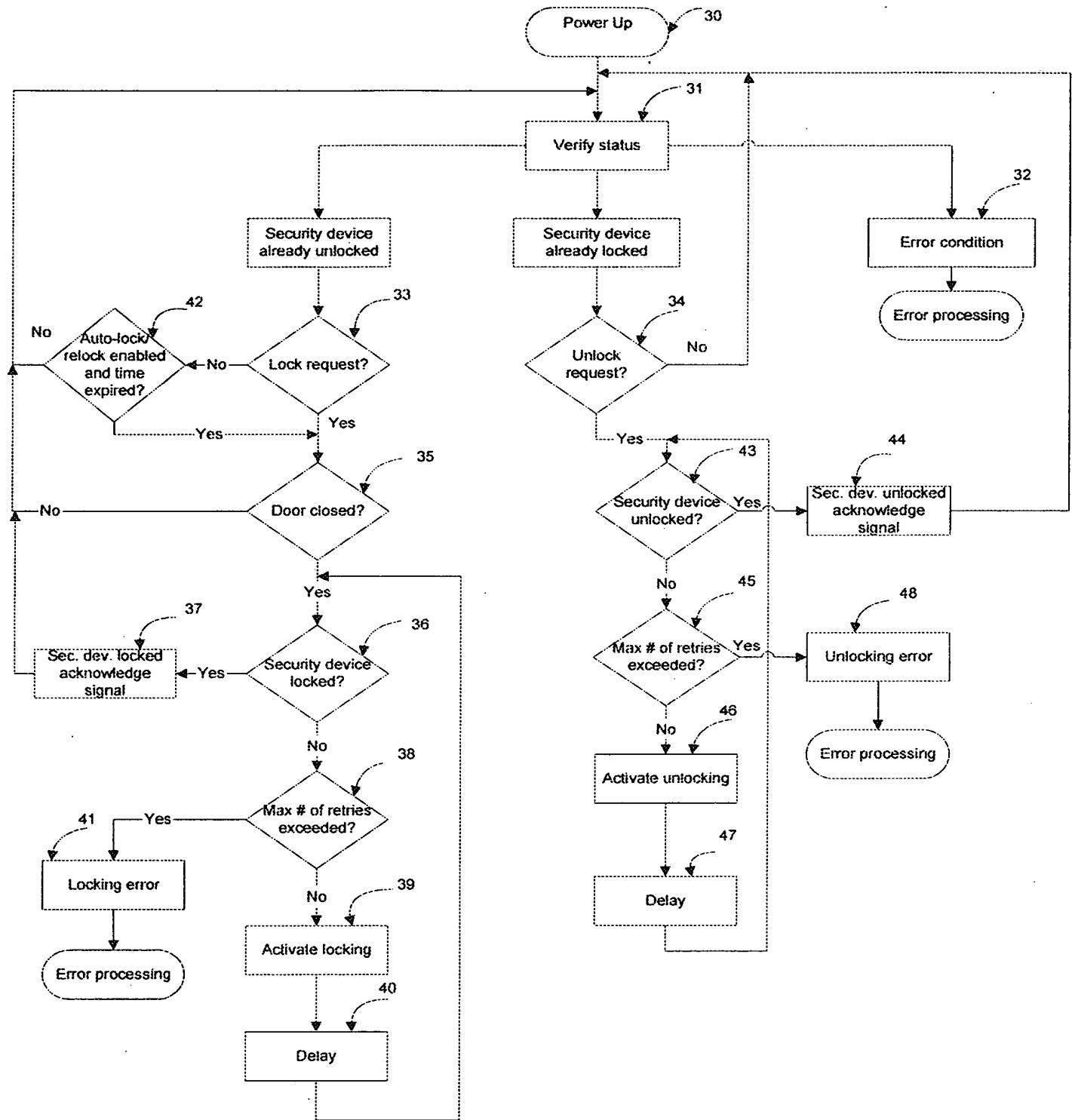
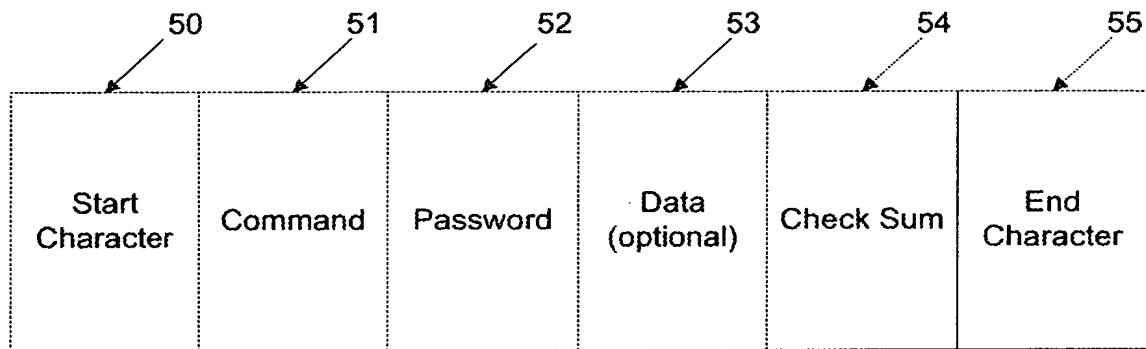
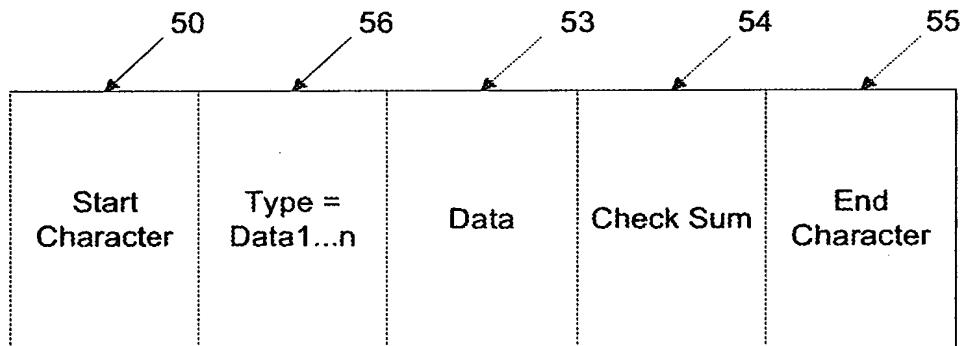


Fig. 3

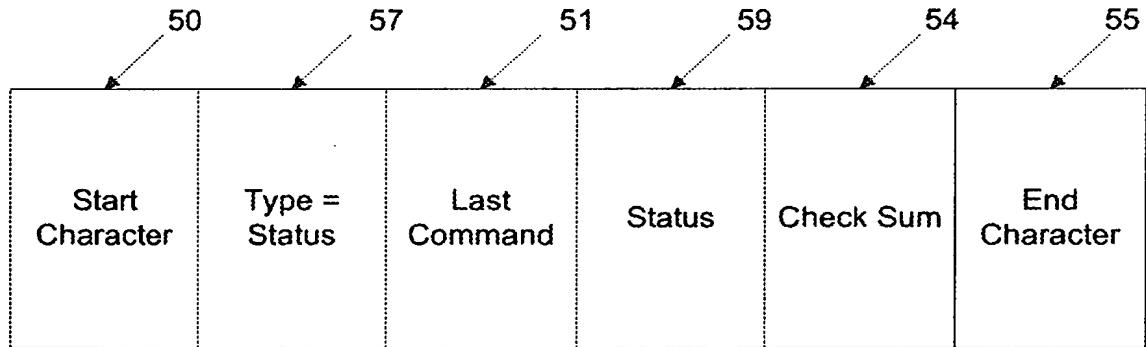
## Fig. 4 Communication Protocol



60 → Command Packet from a PC



61 → Data Packet



62 → Status Packet

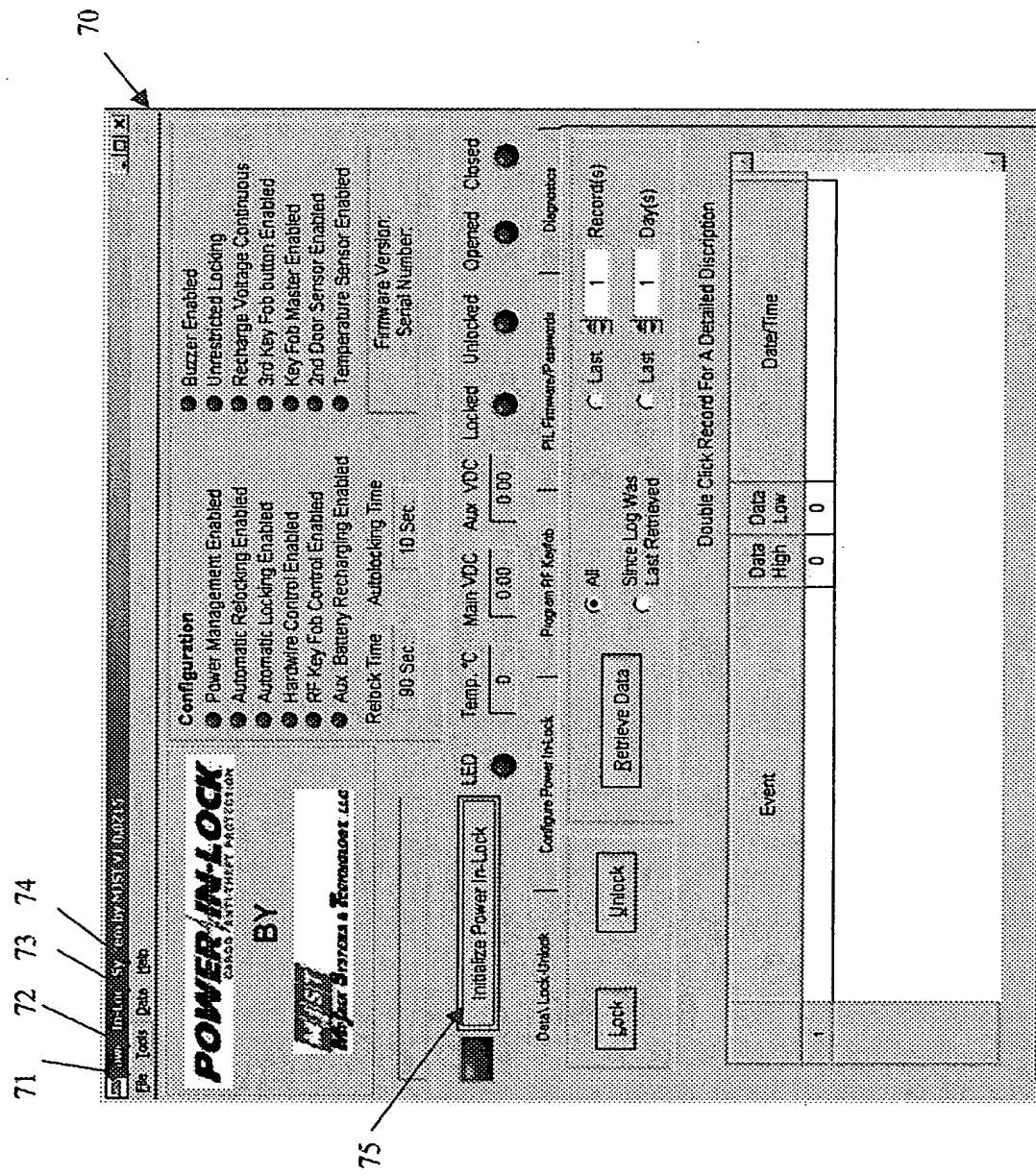


FIG. 5 Data\Lock-Unlock screen – without ECU – PC communication

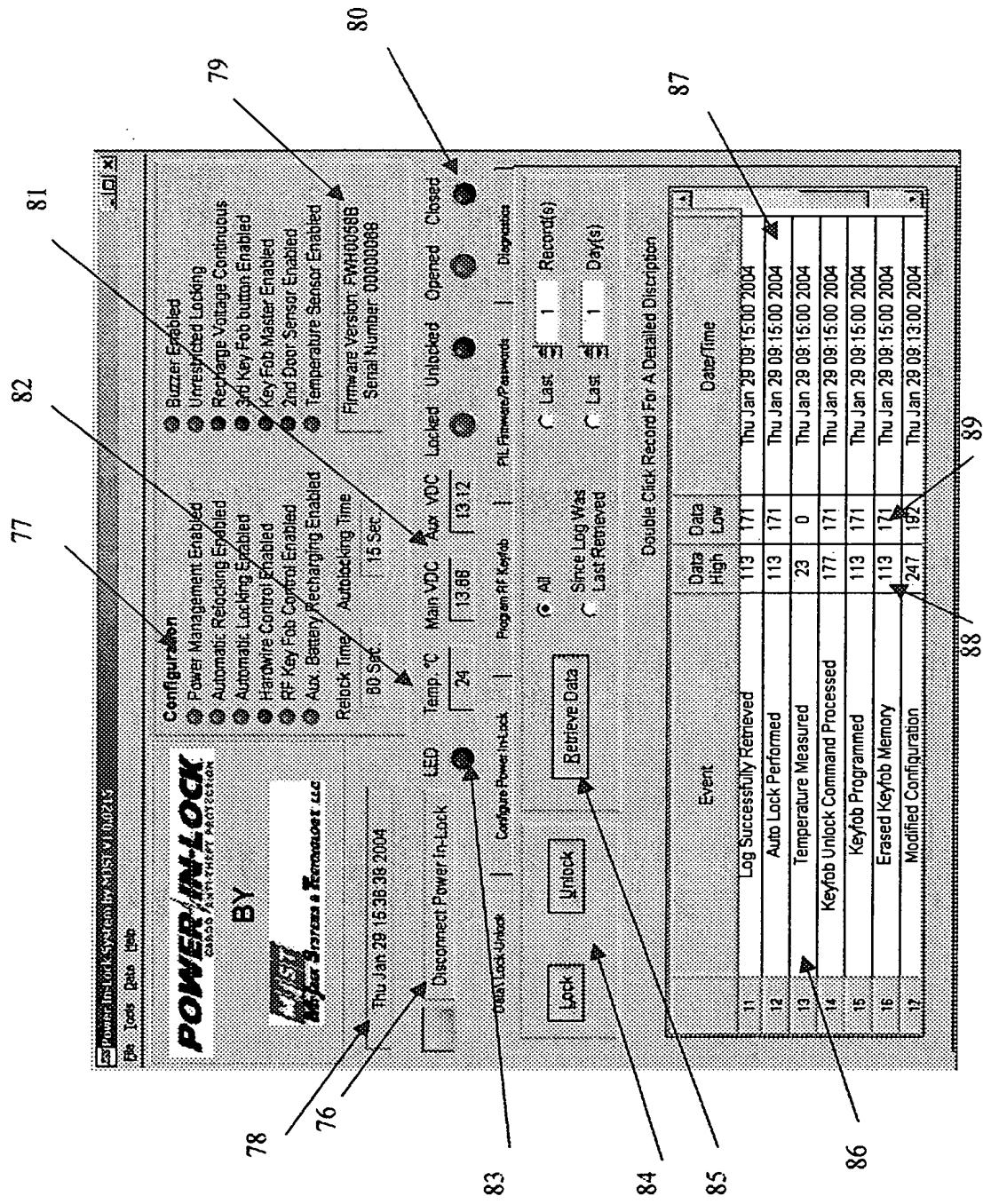


FIG. 6 Data\Lock-Unlock screen when ECU – PC communication is in progress

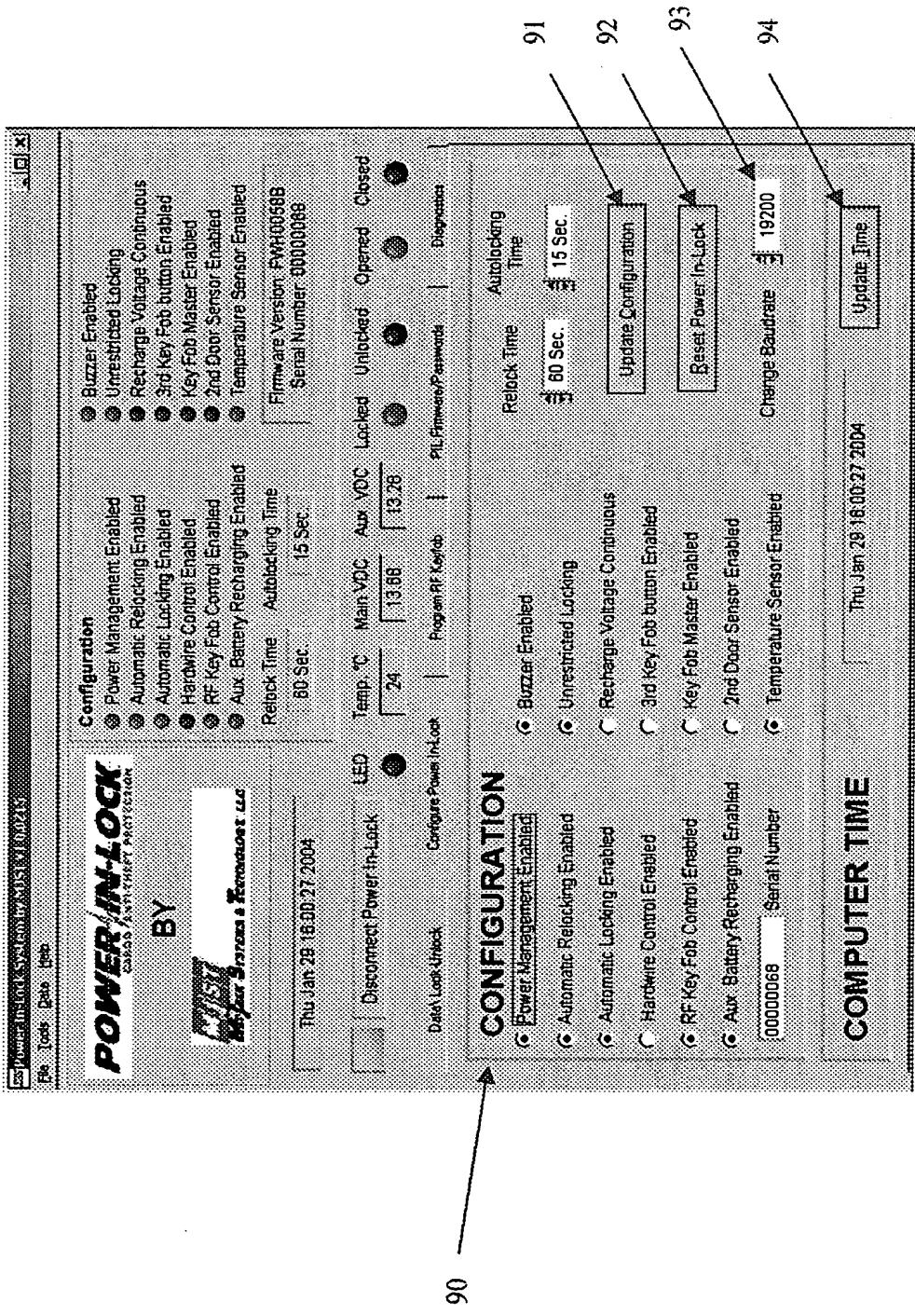


FIG. 7 Configure screen when ECU – PC communication is in progress

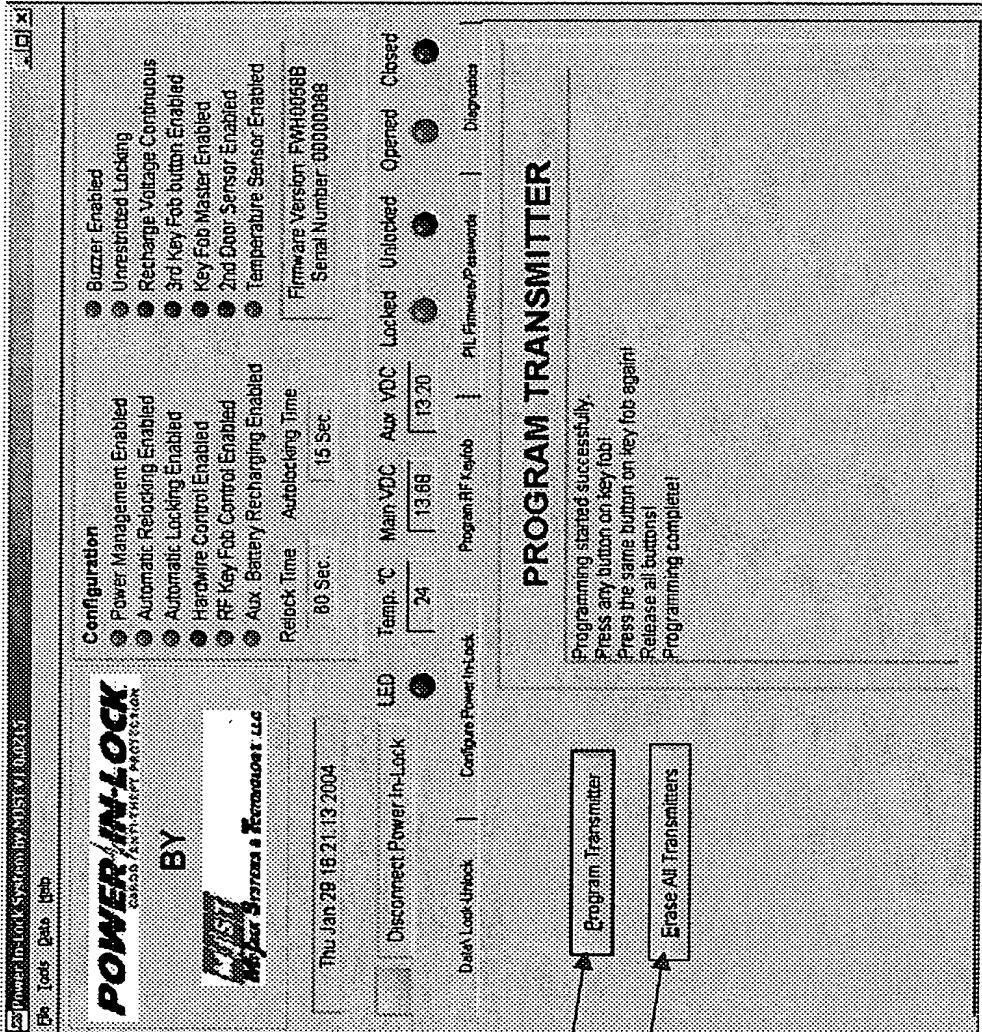


FIG. 8 Program RF key-fob screen when ECU – PC communication is in progress

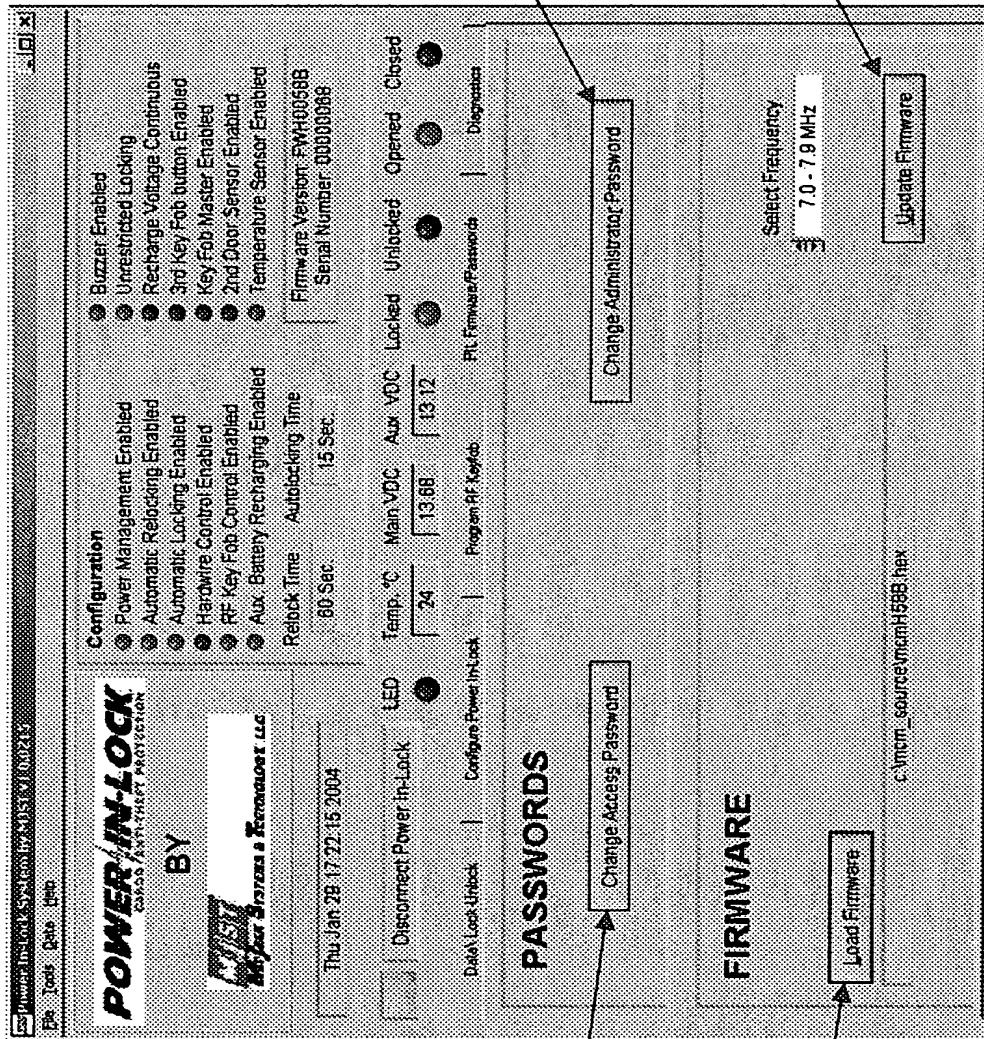


FIG. 9 Firmware/Passwords screen when ECU – PC communication is in progress

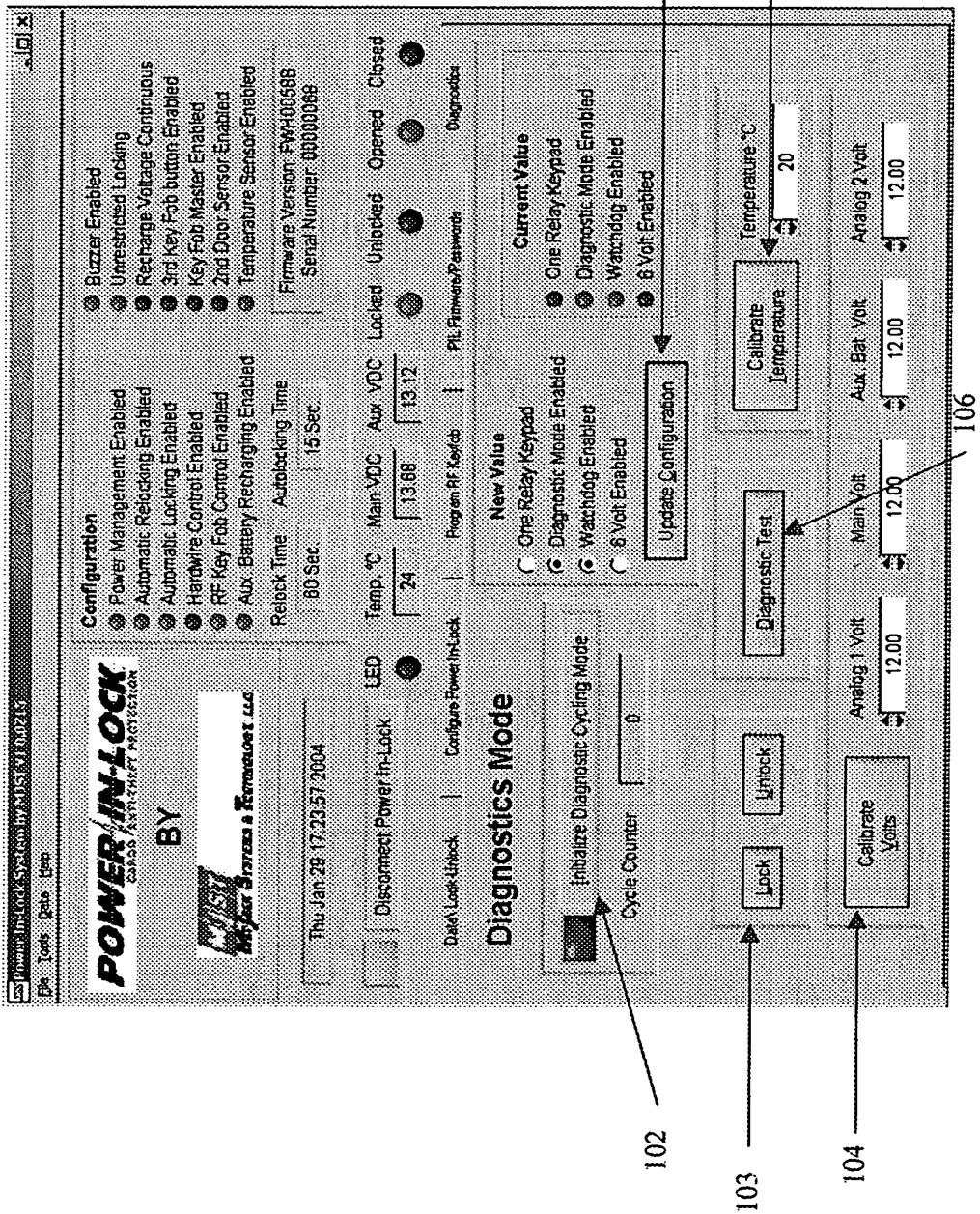


FIG.10 Diagnostics screen when ECU – PC communication is in progress

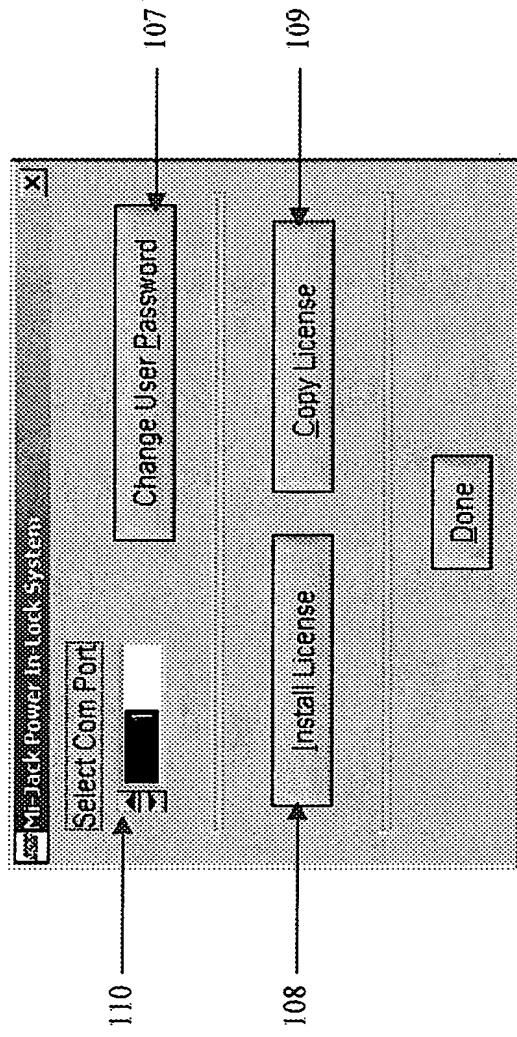


FIG.11 Typical setup screen

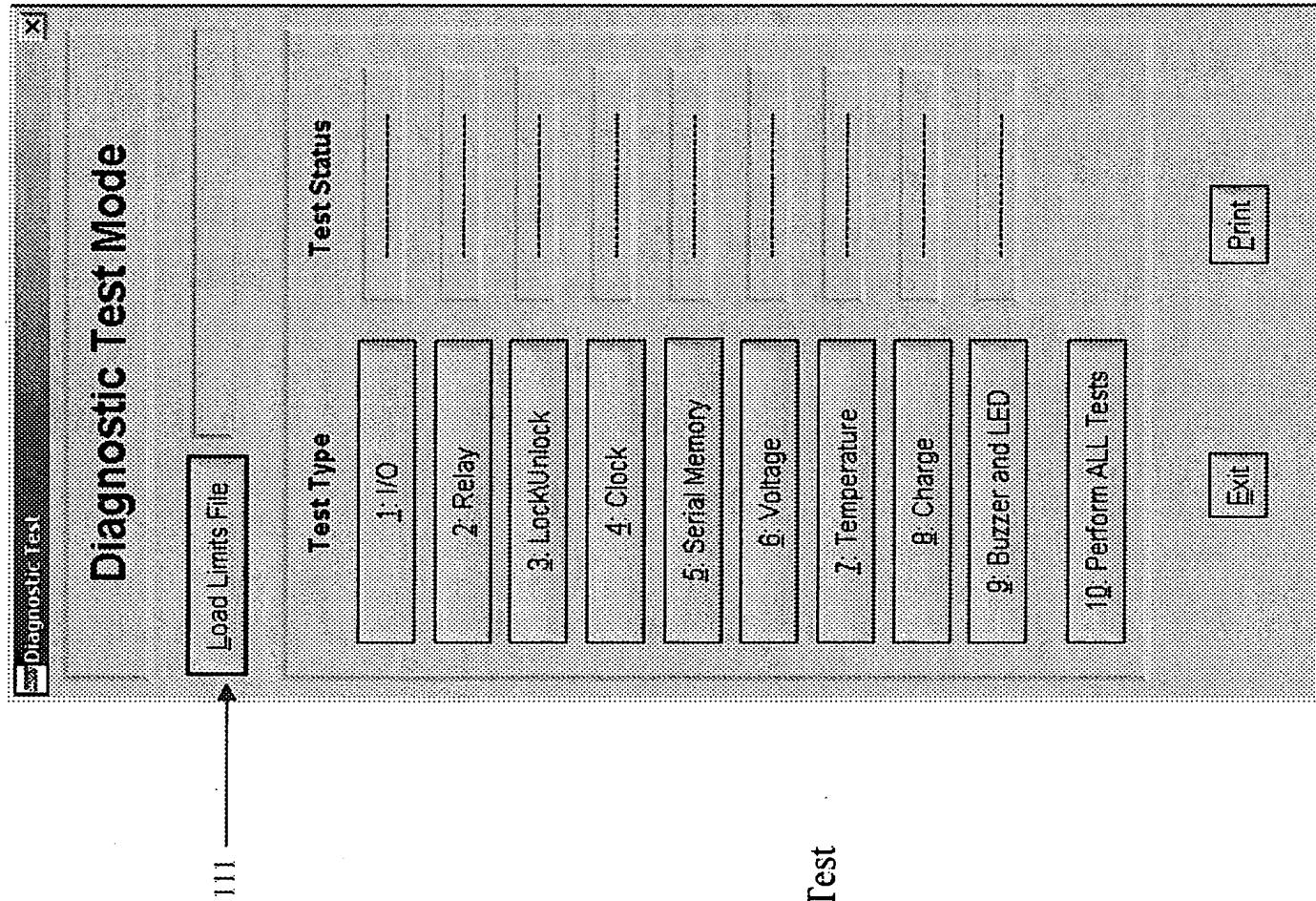


FIG.12  
Diagnostic Test  
screen

# Main Routine

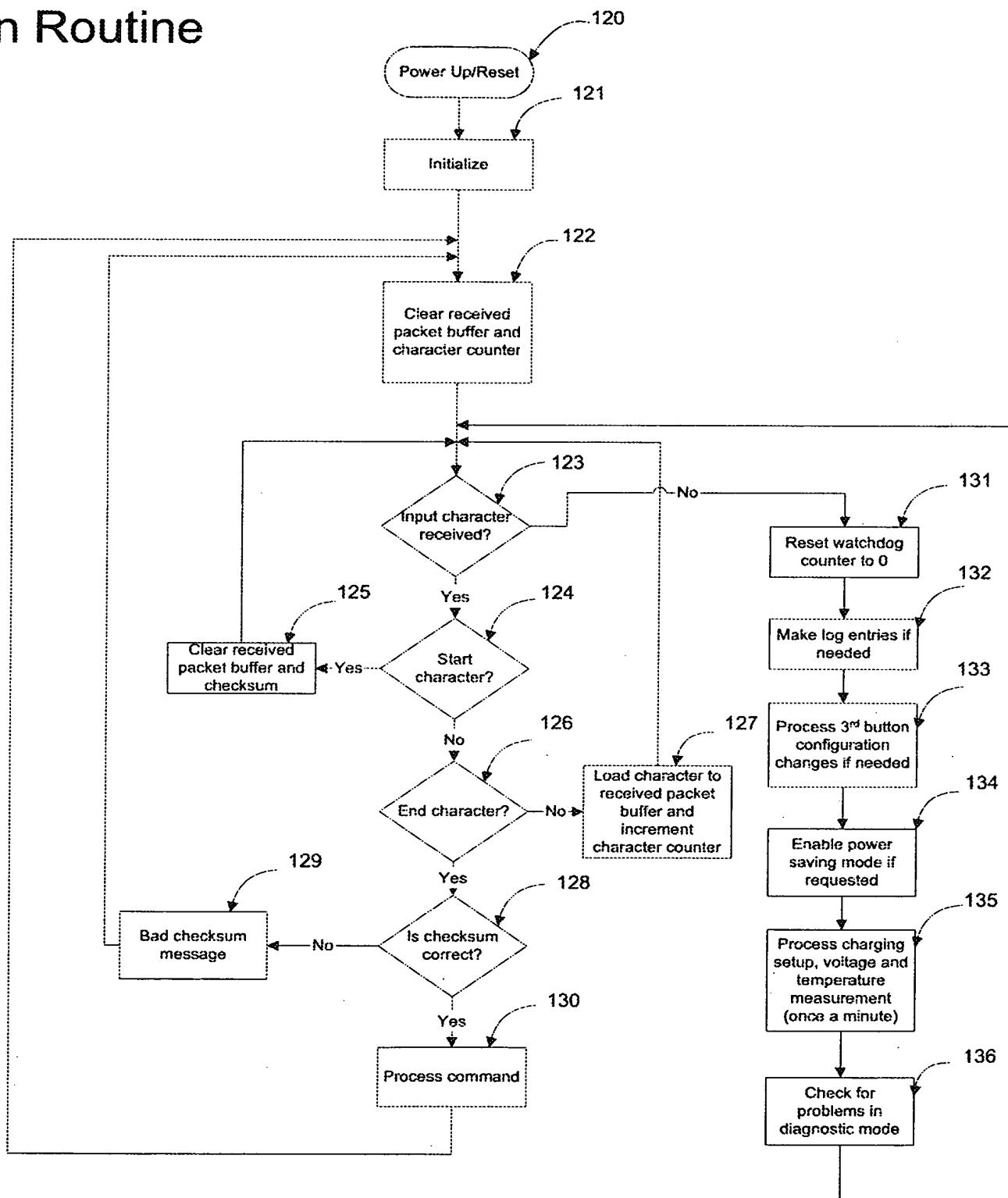


Fig. 13

# Interrupt Routine

Executed every 40 msec

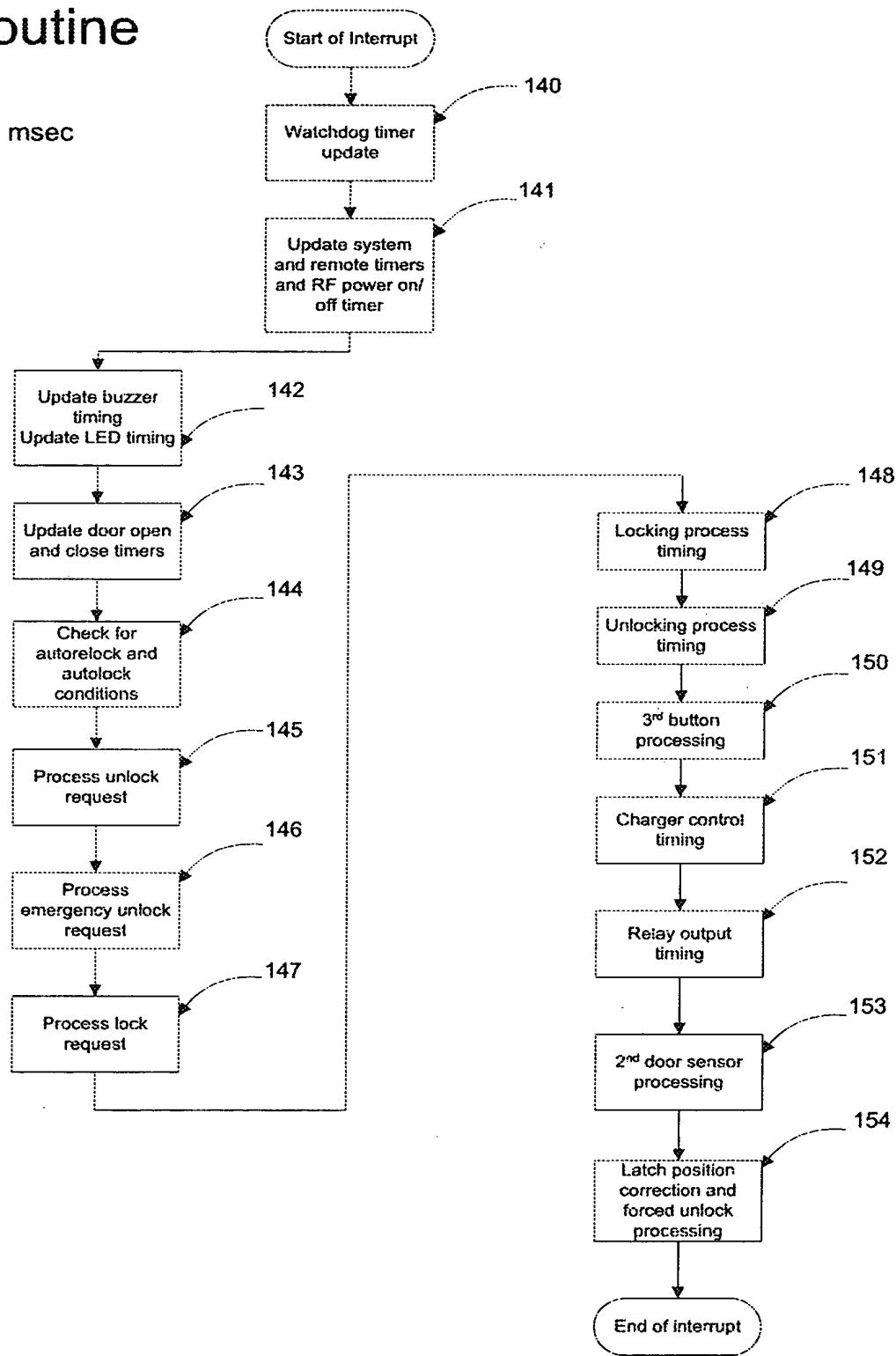
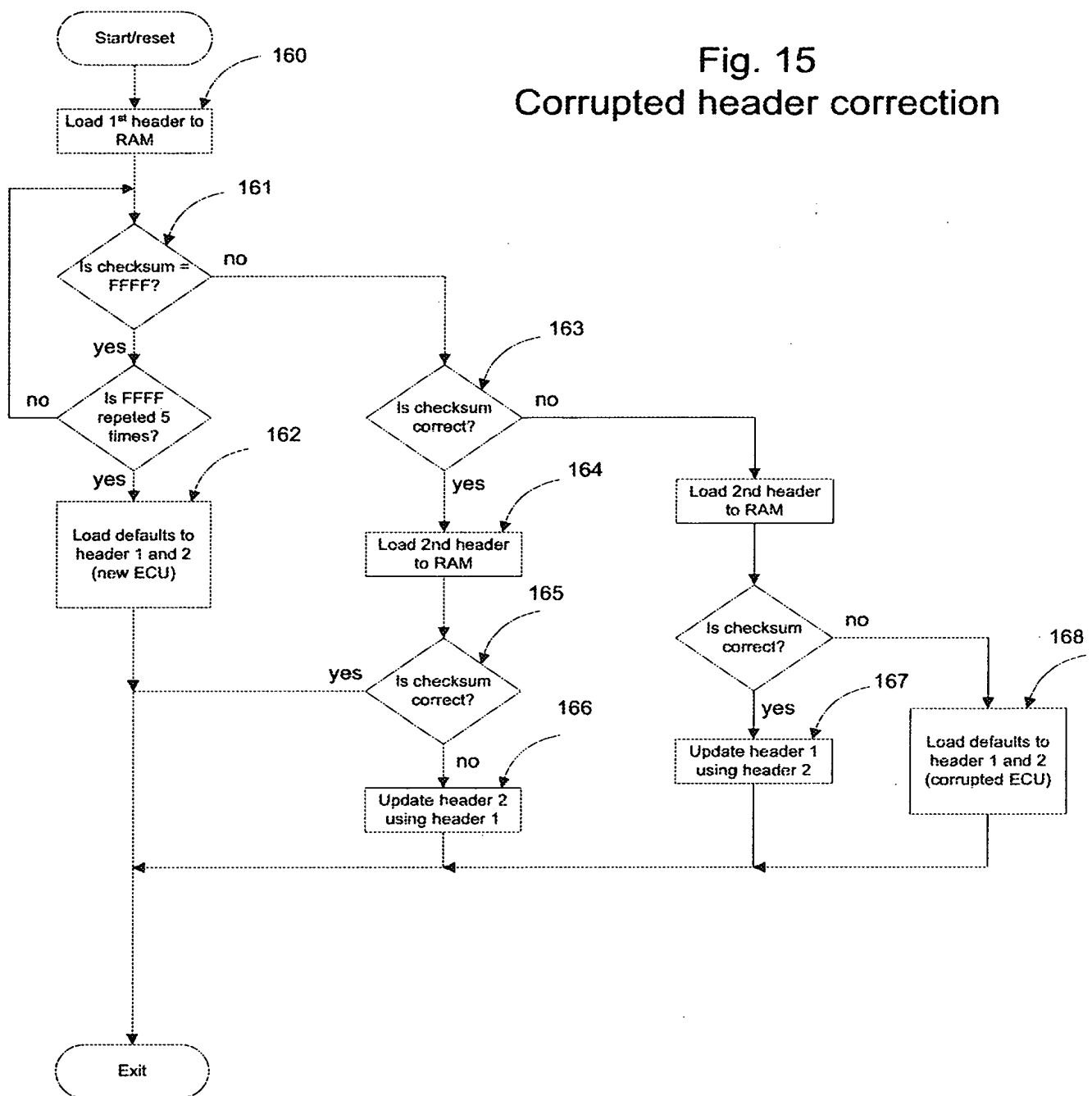
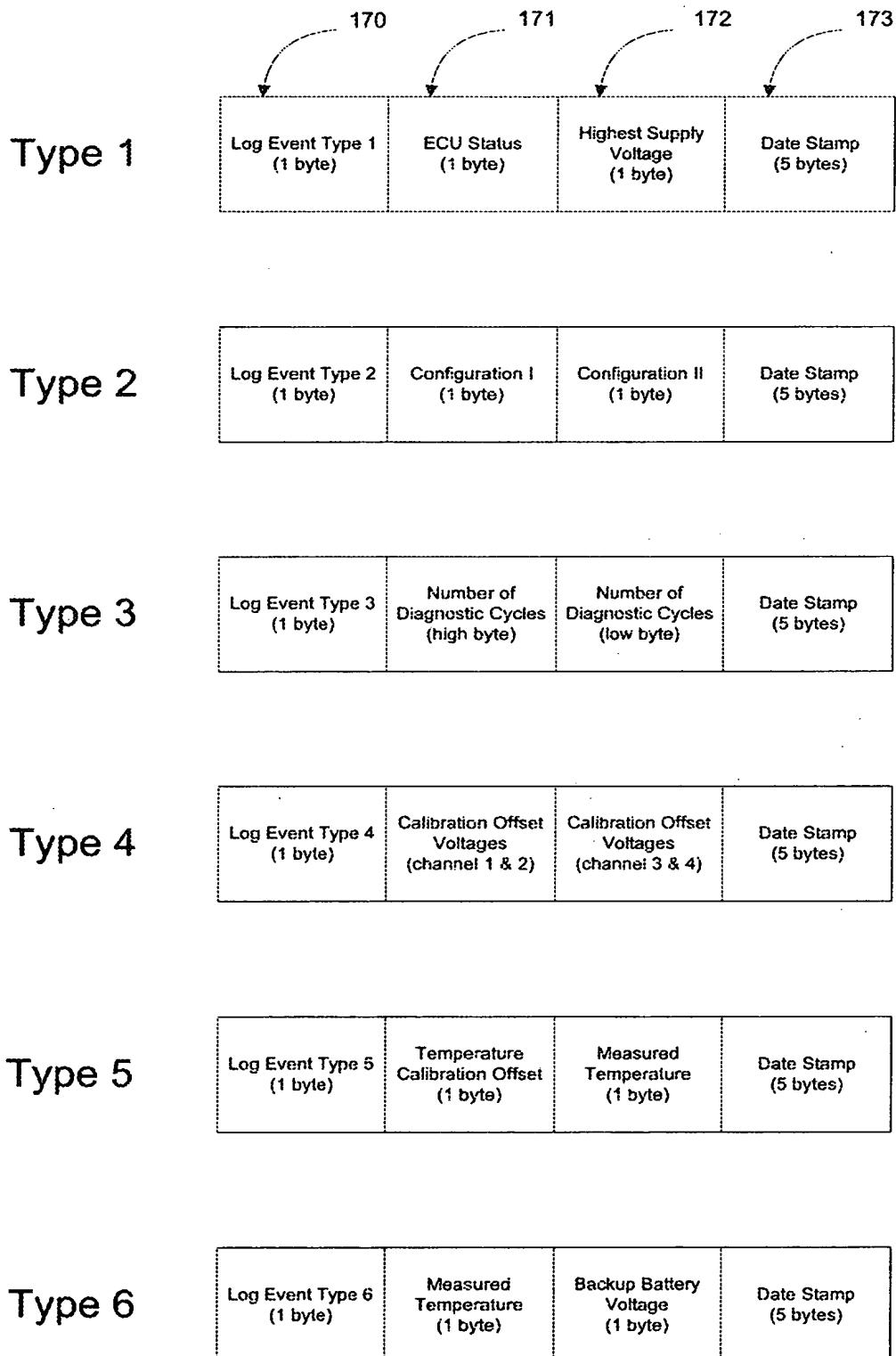


Fig. 14

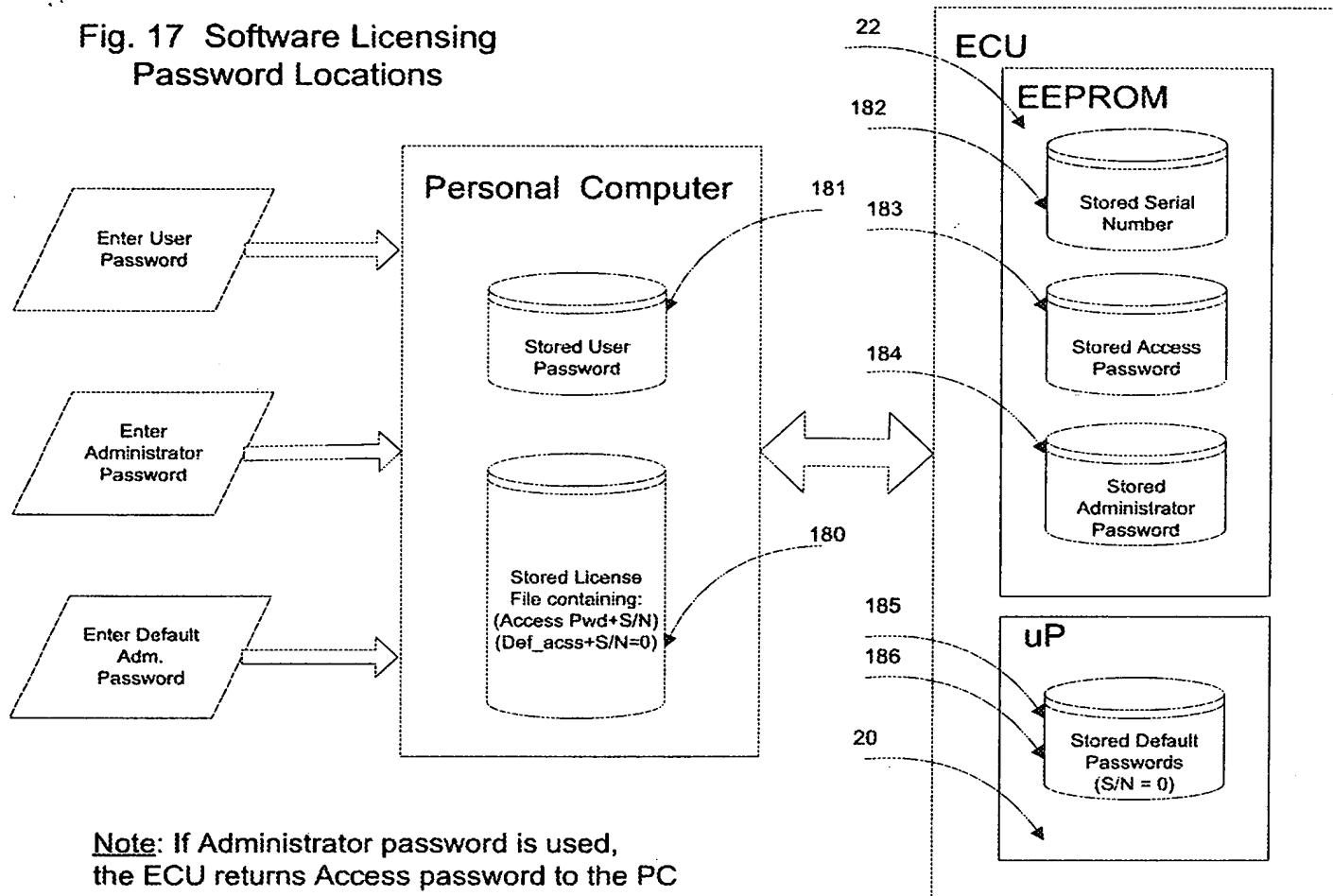
**Fig. 15**  
Corrupted header correction



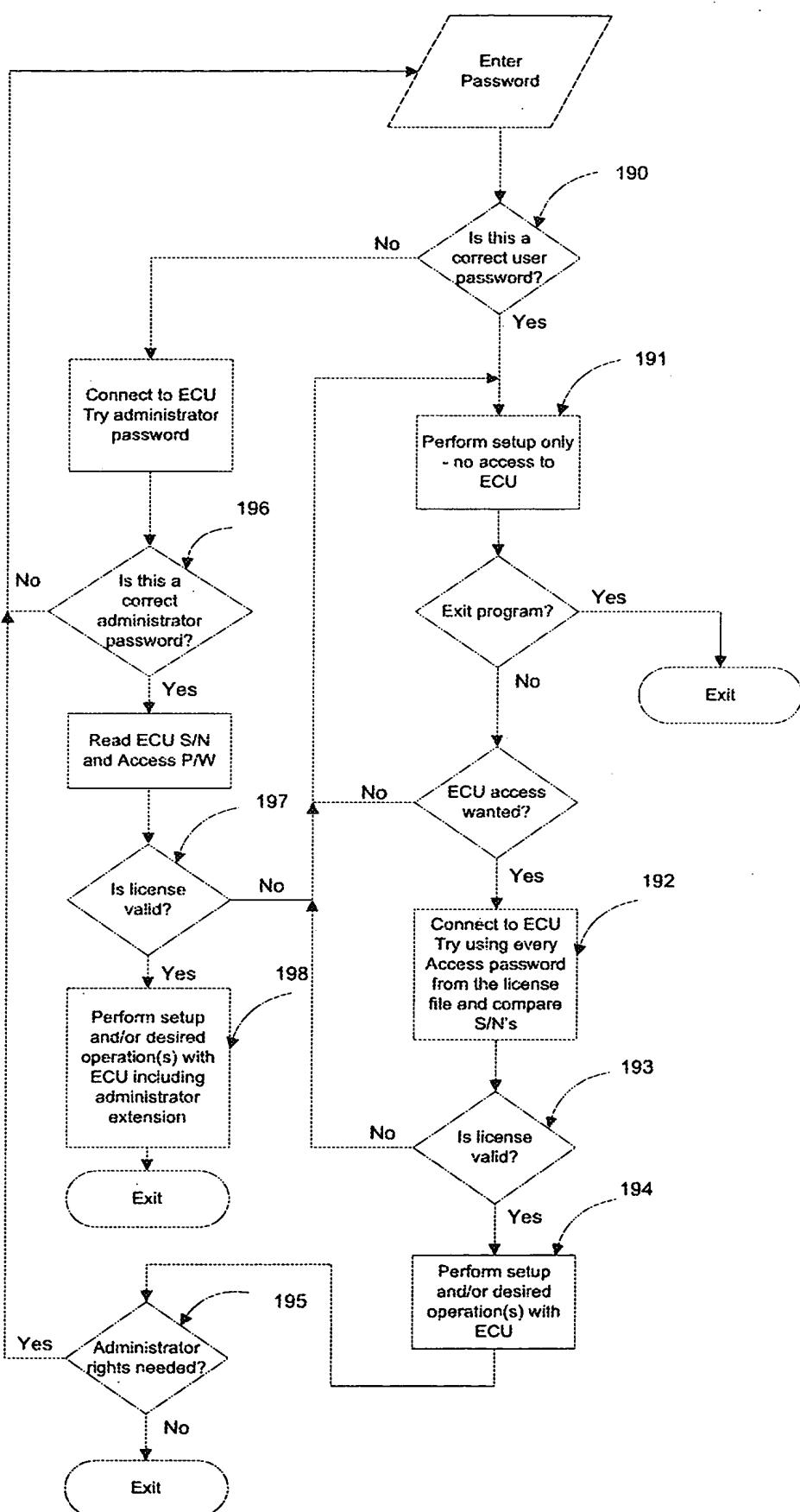
# Fig. 16 Log Entries



**Fig. 17 Software Licensing  
Password Locations**



**Fig. 18**  
**Regular User**  
**and**  
**Administrator**  
**Licensing**  
**(no diagnostics)**



## PIL PASSWORDS w/o diagnostics

FUNCTION	USER PASSWORD w/o license	ADM. PASSWORD w/o license	USER PASSWORD w/license	USER PASSWORD w/default license	ADM. PASSWORD w/license	DEF. ADM. PASSWORD w/default license
Open PC program	X	X	X	X	X	X
Configure com port	X	X	X	X	X	X
Install license file	X	X	X	X	X	X
Change user password	X	X*	X	X	X*	X*
Check ECU serial number	X	X	X	X	X	X
Check ECU firmware version	X	X	X	X	X	X
Check system status	X	X	X	X	X	X
Read system voltages	X	X	X	X	X	X
Read temperature	X	X	X	X	X	X
Check/modify configuration	X	X	X**	X**	X**	X**
Check/modify real time clock	X	X	X	X	X	X
Send software reset	X	X	X	X	X	X
Change ECU baud rate	X	X	X	X	X	X
Erase RF transmitter memory	X	X	X	X	X	X
Program RF transmitter	X	X	X	X	X	X
Lock and unlock	X	X	X	X	X	X
Retrieve log events	X	X	X	X	X	X
Export log events to .txt file	X	X	X	X	X	X
Change Access pswd (ECU & lic. file)	X	X	X	X	X	X
Change Administrator password	X	X	X	X	X	X
Save updated license to disk	X	X	X	X	X	X
Update ECU firmware	X	X	X	X	X	X

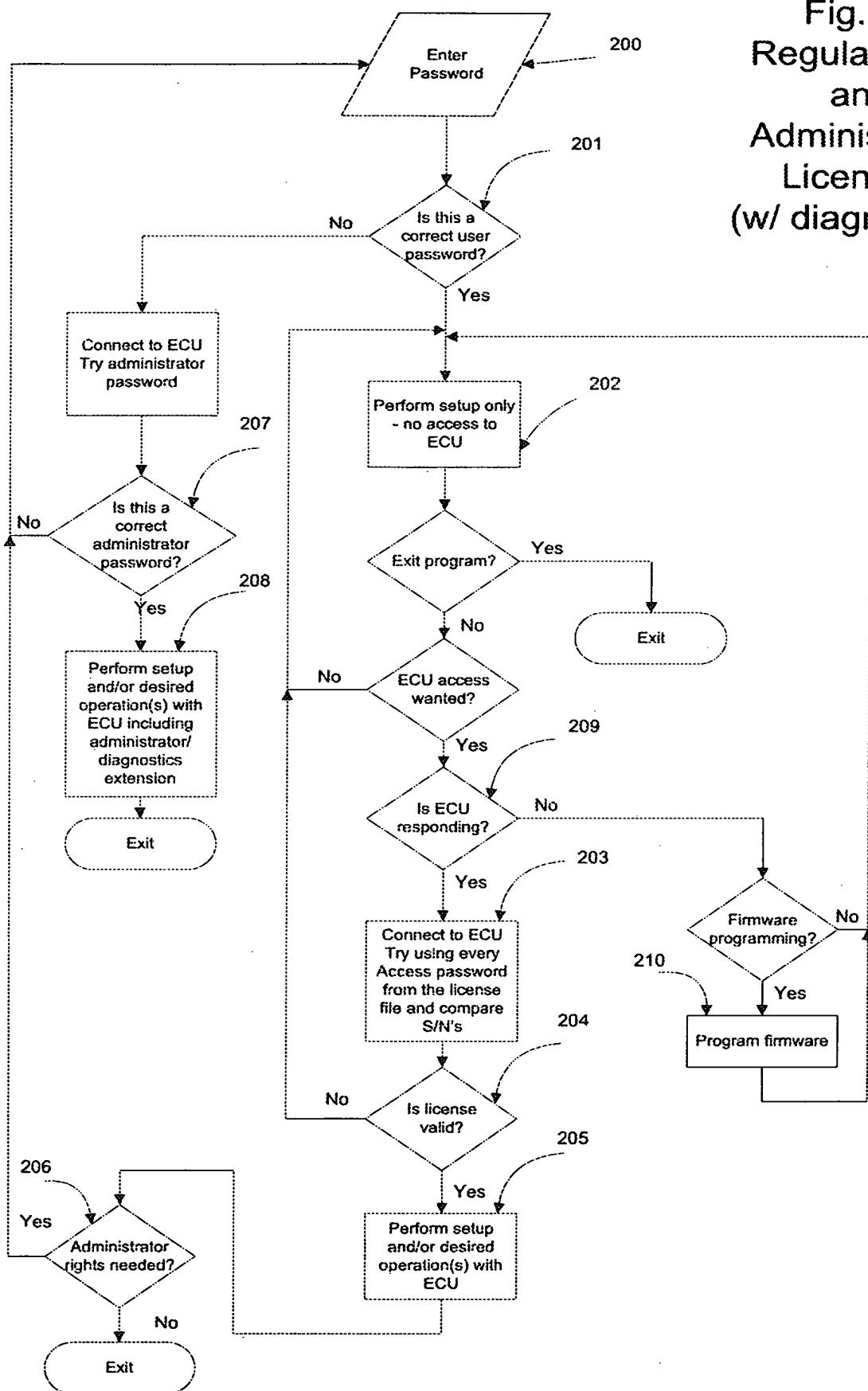
NOTE: default license is used when EEPROM memory is corrupted (default Access Password + S/N = 0)

X\* - if user password is known

X\*\* - read only

Fig. 19

**Fig. 20**  
**Regular User**  
**and**  
**Administrator**  
**Licensing**  
**(w/ diagnostics)**



## PIL PASSWORDS with diagnostics enabled

FUNCTION	USER PASSWORD w/o license	USER PASSWORD w/license	USER PASSWORD w/default license	ADM. PASSWORD confirmed	DEF. ADM. PASSWORD confirmed - EEPROM corrupted
Open PC program	X	X	X	X	X
Configure com port	X	X	X	X	X
Install license file	X	X	X	X	X
Change user password	X	X	X	X***	X***
Check ECU serial number	X	X	X	X	
Check ECU firmware version	X	X	X	X	
Check system status	X	X	X	X	
Read system voltages	X	X	X	X	X
Read temperature	X	X	X	X	X
Check/modify configuration	X	X	X****	X****	X****
Check/modify real time clock	X	X	X	X	X
Send software reset	X	X	X	X	X
Change ECU baud rate	X	X	X	X	X
Erase RF transmitter memory	X	X	X	X	
Program RF transmitter	X	X	X	X	
Lock and unlock	X	X	X	X	X
Retrieve log events	X	X	X	X	
Export log events to .txt file	X	X	X	X	
Change Access pwd (ECU & lic. file)		X	X	X	
Change Administrator password		X	X	X	
Save updated license to disk		X	X	X	
Update ECU firmware	X*		X**	X**	X**
Check/modify additional config. items		X	X	X	X****
Run diagnostic cycling			X	X	
Perform diagnostic lock and unlock			X	X	
Calibrate temperature and voltages			X	X	
Run diagnostic test			X	X	
Repair EEPROM				X	X

NOTE: default license is used when EEPROM memory is corrupted (default Access Password + S/N = 0)

X\* - if ECU is not programmed/not responding

X\*\* - if ECU is already programmed

X\*\*\* - if user password is known

X\*\*\*\* - read only

Fig. 21